



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,830	05/03/2001	Steven M. Zuniga	2834/303002	9467

32588 7590 08/15/2003

APPLIED MATERIALS, INC.
2881 SCOTT BLVD. M/S 2061
SANTA CLARA, CA 95050

EXAMINER

MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
----------	--------------

1763

DATE MAILED: 08/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/848,830

Applicant(s)

ZUNIGA ET AL.

Examiner

Sylvia R MacArthur

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Sheet 1 of 1

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 05542-303002	Application No. 09/848,830
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Steven M. Zuniga, et al.	
		Filing Date May 3, 2001	Group Art Unit

U.S. Patent Documents							
Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
<i>SM</i>	AA	5,643,053	07/01/97	Shendon			
<i>SM</i>	AB	5,645,474	07/08/97	Kubo et al.			
<i>SM</i>	AC	5,647,789	07/15/97	Kitta et al.			
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
<i>SM</i>	AQ	"High-Tech Resins Boost Chip Production", Machine Design, November 7, 1996, pp 52+. ["Machine Design"]
<i>SM</i>	AR	"Advanced Engineering Plastics for the Semiconductor Industry", DSM Engineering (Polymer Corporation), 1996. ["DSM"]
<i>SM</i>	AS	"Advanced Engineering Plastics for the Semiconductor Industry", DSM Engineering (Polymer Corporation), 1997. ["DSM"]
<i>SM</i>	AT	"SPM Purchase Orders for PPS Techtron Purchased from Laird Plastics, Invoice Copies from Laird", 1996. Laird Plastics
<i>SM</i>	AU	"SPM's PPS Ring Sales History", January 1997 thru November 1999

Examiner Signature <i>Stephen M. Zuniga</i>	Date Considered 8/6/03
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Disclosure Form (PTO-1449)

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-30 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,251,215. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed invention requires a two-part retaining ring wherein the upper portion is made of metal more rigid than the plastic lower portion. The plastic lower portion has a hardness of between 80 and 95 on the Shore D scale.

In comparison, the patent also requires a two-part retaining ring wherein the upper portion is made of metal more rigid than the plastic lower portion. The type of material of the lower portion is specified as PPS having a hardness of between 80 and 95 on the Shore D scale. The patent further requires that the upper and lower portion be attached by an epoxy.

The PPS and epoxy or adhesive attachment limitation are claimed in dependent claims of the present application.

Claim Rejections - 35 USC § 103

Art Unit: 1763

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 8, 9, 12, 13, 20, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshizaki et al (US 5,759,918) in view of Kim (US 5,695,392).

which Fig?
Fig. 11
Regarding claim 1: Hoshizaki et al teaches a carrier head 202 for a CMP apparatus

comprising: a rigid base 274

a substrate mounting surface 277 that is vertically moveable relative to the base (note col. 5 lines 60-63)

a retaining ring 282 features a substantially annular lower portion (wear ring 291) which comprises a plastic material see col. 11 lines 30-33. The retaining ring further comprises a retention ring 282 (upper portion).

Figure 10 illustrates that the upper portion comprises a bottom surface joined to the lower portion and a top surface fixed to and abutting the bases, see col. 11 lines 34-37

Hoshizaki fails to teach the material of construction of the upper portion 282.

Col
line
Kim teaches a retaining ring with "two joinable parts". Kim teaches the parts of the retaining ring (200) and the pressure plate (28) are made from plastic or metallic material.

The motivation to combine the teachings of Hoshizaki and Kim are to provide materials of construction for the retainer ring upper/lower portions.

Regarding claims 8 and 20: The metal discussed is steel according to col. 4 line 62.

Art Unit: 1763

Regarding claim 9: The elastic moduli of a material is a physical property, one of ordinary skill in the art would include this property in its consideration.

Regarding claim 12 and 24: Both fail to teach that the parts of their retaining ring assembly are press fit together.

Nevertheless, though each are silent to the means of adhering the parts together. Press-fitting is an art recognized means of adhering to joinable parts within the art-recognized equivalents of adhesion such as adhesives, mechanical abutment, such as screws, etc.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to use press-fitting as the means of adhering the parts of the retaining ring formed from the teachings of Hoshizaki modified by Kim.

Regarding claim 13: Kim teaches that the retaining ring (200) and pressure plate (28) are mechanically affixed to one another by screws 39.

Mechanical affixing is an art recognized means of adhering to joinable parts within the art-recognized equivalents of adhesion such as adhesives, mechanical affixing, such as screws, etc.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to use mechanical affixing as the means of adhering the parts of the retaining ring formed from the teachings of Hoshizaki modified by Kim.

5. Claims 2-7 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshizaki et al in view of Kim as applied in claim 1 above, and further view of DSM.

Art Unit: 1763

Regarding claims 2 and 14: Hoshizaki and Kim fail to teach the chemical or physical properties of the plastic used in the lower portion.

DSM teaches a retaining ring used in CMP and made of Techtron PPS. This material is cited to withstand the chemical and mechanical stresses present during polishing, see page 3, paragraph beginning with "New products...".

Regarding claims 3 and 15: The Material Property Comparison Table, Item 12, for Hardness, Durometer, Shore "D" scale, 73 deg. F where Techtron CM PPS is shown as D85.

Regarding claims 4 and 16: According to *In re Gardner v. TEC Systems, Inc.*, 725 F.2d. 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. Denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would perform ^{no} differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Regarding claims 5 and 17: Hoshizaki illustrates in Fig. 11 that the upper portion 282 is thicker than the lower portion 291.

Regarding claims 6, 7, 18, and 19: DSM discussed polyphenylene sulfide (PPS).

Regarding claims 25-30: see rejections for claim 1, 3, 4, 9, and 13.

6. Claims 10, 11, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshizaki et al in view of Kim as applied in claim 1 above, and further view of Kubo et al (EP 0776730).

Art Unit: 1763

The teachings of Hoshizaki and Kim were discussed above.

Regarding claims 10 and 22: Both fail to teach that the upper and lower portions of their retainer ring assemblies are adhesively attached.

Kubo teaches a retaining ring with a rigid upper insert ring and a lower plastic portion. Adhesive is used to attached the portions, see page 5 lines 60-62.

Thus, it would have been obvious at the time of the claimed invention to modify the apparatus produced from the combined teachings of Hoshizaki and Kim with the teachings of Kubo to adhere to parts with an adhesive as taught by Kubo as a known means of adhering joinable parts.

Regarding claims 11 and 23: Epoxy is an art-recognized type of adhesive and is described in page 6 of Kubo. The epoxy is over-cured; slow curing epoxies are obvious matters of design choice.

Thus, it would have been obvious at the time of the claimed invention to modify the apparatus produced from the combined teachings of Hoshizaki and Kim with the teachings of Kubo to adhere to parts with an adhesive preferably a slow-curing epoxy.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 703-306-5690. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the

Application/Control Number: 09/848,830

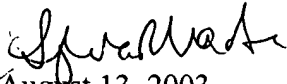
Page 7

Art Unit: 1763

organization where this application or proceeding is assigned are 703-872-9630 for regular communications and 703-872-9630 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Sylvia R MacArthur
Patent Examiner
Art Unit 1763


August 13, 2003